REMARKS

This is a full and timely response to the Office Action mailed March 18, 2003 (Paper No. 3). Reexamination and reconsideration in light of the above amendments and following remarks is respectfully solicited.

Claims 1-33 remain pending in the application, with Claims 1, 19, and 27 being the independent claims. Independent Claim 1 has been cosmetically amended herein to provide antecedent basis for a recited element. In addition, independent Claims 1 and 27 have been amended to even further clarify the invention defined by each of these claims. No new matter is believed to have been added.

Objections to the Specification/Drawings:

The specification was objected to because of various alleged informalities. Namely, no description was provided for FIG. 5C; a reference numeral (i.e., 8xxx) was cited in the specification but not included in the drawings; and, reference numeral 421 is not shown in FIG. 6A.

In response, Applicants have revised the specification to include a brief description of FIG. 5C, and have revised the specification to remove the erroneous reference numeral "8xx," and include the correct reference numeral "865." As regards reference numeral 421, Applicants have submitted herewith a Request for Approval to Amend the Drawings, which includes appropriate revision to FIG. 6A to include reference numeral 421. The Request additionally requests approval to amend various other drawings, to provide further clarity to the described invention.

Reconsideration and withdrawal of the objections to the specification and drawings are therefore requested.

Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 1-18 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for lack of antecedent basis for a particular term. In response, Applicants have amended independent Claim 1 by replacing "said current position" with "said current attribute," which has proper antecedent basis.

In view of the above, reconsideration and withdrawal of the rejection under 35 U.S.C. §

112, second paragraph is respectfully solicited.

Rejections Under 35 U.S.C. § 112, First Paragraph

Claims 5, 10-17, 29, and 30 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly not being enabled by the specification. Specifically, the Office Action alleges that the specification does not enable displaying first and last capture initiation positions. Apparently, this allegation is based on the description provided on pages 13-15, and the concomitant illustrations in FIGS. 6 and 7. The Office Action alleges that the description indicates that the first capture initiation point is higher than the last capture initiation point. For at least the following reasons, this rejection is traversed.

The description of the display shown in FIG. 6A, and the exemplary maneuver and display shown in FIGS. 7A-7F, are for an embodiment in which the distances to the first and last points to initiate a capture are calculated relative to the aircraft, and from the frame of reference of the aircraft. This is consistent with the embodiment described on page 12, lines 21-26, and depicted in FIG. 5A. Thus, in FIG. 6A, the first point to initiate capture 515 corresponds to bracket end 616, and the last point to initiate capture 520 corresponds to bracket end 614. This indicates to the pilot that aircraft 201 should initiate capture when bracket end 616, which corresponds to an altitude of 544 feet above the current aircraft altitude, reaches the target altitude icon 420, and no later than when bracket end 614, which corresponds to an altitude of 294 feet above the current aircraft altitude, reaches target altitude icon 420.

Although Applicants submit that the specification, as originally filed, fully and completely describes and enables all of the claims, Applicants have amended the specification to further clarify what is shown in FIGS. 6A and 7A-7F. Moreover, although no objection was made to the description provided in paragraphs [0061] and [0062], Applicants have nonetheless amended paragraph [0060] to further clarify this description, as well.

Therefore, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, first paragraph is respectfully requested.

Rejections Under 35 U.S.C. § 102(b)

Claims 1-4, and 6 were rejected under 35 U.S.C. § 102 (b) as allegedly being anticipated by U.S. Patent No. 5,420,582 (Kubbat et al.). This rejection is respectfully traversed.

Independent Claim 1 relates to a method for providing information to a pilot of a vehicle via a display that includes indicating a current attribute of the vehicle, receiving a target attribute, and determining a first capture attribute, and recites, *inter alia*, displaying said first capture attribute on said display in conjunction with said current attribute of said vehicle.

Kubbat et al. relates to a method and apparatus for displaying aircraft flight management information, and discloses displaying a predicted flight path of an aircraft using a plurality of triangular disks (25-30), referred to therein as a predictor (31) (col. 6, ll. 62-66). A frame (39) is also disclosed as being displayed. The frame (39), referred to therein as a flight path director, "flies" a distance in front of the aircraft and at the tip of the flight path displayed using the predictor (31) (col. 7, ll. 40-48). Using the flight path director (39) and the predictor (31), the pilot can control the aircraft to fly the predicted flight path that is displayed as the predictor (31) (col. 9, ll. 6-12).

Applicants submit, however, that Kubbat et al. fails to disclose (or even remotely suggest) at least the above-noted feature of independent Claim 1. Namely, Kubbat et al. fails to disclose displaying a capture attribute on the display in conjunction with the current attribute of the vehicle. Although Kubbat et al. does disclose displaying a predicted trajectory, this citation does not disclose displaying a first capture attribute, which corresponds to a point on the predicted trajectory at which capture should be initiated in order for the vehicle obtain the position predicted by the predicted trajectory.

Based on the above, reconsideration and withdrawal of the § 102 (b) rejection is respectfully solicited.

Rejections Under 35 U.S.C. § 102(e)

Claims 1-3, 6, 19-28, and 31-33 were rejected under 35 U.S.C. § 102 (e) as allegedly being anticipated by U.S. Patent No. 6,441,751 (Berlioz et al.). This rejection is respectfully traversed.

As was noted above, independent Claim 1 relates to a method for providing information to a pilot of a vehicle via a display that includes indicating a current attribute of the vehicle, receiving a target attribute, and determining a first capture attribute, and recites, *inter alia*, displaying said first capture attribute on said display in conjunction with said current attribute of said vehicle.

Independent Claim 19 relates to a method for providing feedback that includes providing an altitude tape, and displaying thereon a current aircraft altitude and a target indicator representative of a target altitude, and recites, *inter alia*, displaying on said altitude tape a path capture trajectory relative to said current aircraft altitude and corresponding to said target indicator.

And, independent Claim 27 relates to a display for an aircraft that includes a sliding scale altitude indicator and a capture region indicator on said sliding scale altitude indicator, and recites, *inter alia*, said capture region indicator including at least a point for initiating capture.

Berlioz et al. relates to an aircraft altitude and vertical speed indicator (1A, 1B) that simultaneously displays aircraft altitude (8, 9), a target aircraft altitude (14), a vertical speed (11), and a target vertical speed (15A, 15B). The indicators are positioned in the indicator (1A, 1B) in such a way that a target trajectory is obtained when the vertical speed indicator (11) is aligned with the target vertical speed indicator (15A, 15B), and when the aircraft altitude indicator (9) is aligned with the target aircraft altitude indicator (14). However, it is submitted that Berlioz et al. fails to disclose (or even remotely suggest) at least the above-noted features of independent Claims 1, 19, and 27.

Specifically, Berlioz et al. fails to disclose displaying the first capture attribute on the display in conjunction with the current attribute of the vehicle. As was noted above, and is more explicitly recited in independent Claim 1, the first capture attribute corresponds to a point at which capture should be initiated in order for the vehicle to obtain the target attribute. Conversely, what Berlioz et al. discloses is displaying a point at which capture is attained. Indeed, Berlioz et al., states that "capture of the target trajectory is therefore displayed by the opposite positioning (zero altitude deviation β) of said fixed mark 9 and of said mobile mark 14; and after capture, to achieve the following of the target trajectory, it is sufficient for the pilot to simply command the aircraft in such a away as to keep said needle 11 pointed at said end 16A, 16B of said second means of indication 15A, 15B" (col. 7, ll. 52-60). Thus, Berlioz et al. does not disclose displaying a first capture attribute, as defined in independent Claim 1.

+ initiated

As regards independent Claim 19, it is submitted that Berlioz et al. additionally fails to disclose "displaying on said altitude tape a path capture trajectory relative to said current aircraft altitude and corresponding to said target indicator," as recited therein. As was noted above, Berlioz et al. discloses displaying only the point at which capture is attained. The capture point

is attained when the altitude indicator and vertical speed indicator are aligned with the target altitude indicator and target vertical speed indicator, respectively, and is completely different from a path capture trajectory. Displaying a path capture trajectory relative to the current aircraft altitude and corresponding to the target indicator is simply not disclosed or suggested in Berlioz et al.

With respect to independent Claim 27, it is submitted that Berlioz et al. fails to disclose "said capture region indicator including at least a point for initiating capture," as recited therein. Again, Berlioz et al. discloses displaying the point at which capture of a target trajectory is attained, which is wholly different from a point at which capture initiation should occur. Although the point of capture attainment disclosed in Berlioz et al. is certainly bounded by a region, the region that is displayed does not include at least a point for initiating capture.

In view of the above, Applicants respectfully solicit reconsideration and withdrawal of the § 102(e) rejection.

Conclusion

Based on the above, independent Claims 1, 19, and 27 are patentable over the citations of record. The dependent claims are also submitted to be patentable for the reasons given above with respect to the independent claims and because each recite features which are patentable in its own right. Individual consideration of the dependent claims is respectfully solicited.

The other art of record is also not understood to disclose or suggest the inventive concept of the present invention as defined by the claims.

Hence, Applicants submit that the present application is in condition for allowance. Favorable reconsideration and withdrawal of the objections and rejections set forth in the above-noted Office Action, and an early Notice of Allowance are requested.

If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the below-listed number.

If for some reason Applicant has not paid a sufficient fee for this response, please consider this as authorization to charge Ingrassia, Fisher & Lorenz, Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

Dated: June 13, 2003

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VERSION WITH MARKINGS TO SHOW CHANGES

The following clearly show the changes being made in the amendment filed contemporaneously herewith.

IN THE SPECIFICATION:

1. Paragraph [0025] is amended as follows:

[0025] ~~FIG. 5A and FIG. 5B~~ FIGS. 5A-5C are exemplary depictions of an aircraft ascending to an assigned altitude or target;

2. Paragraph [0035] is amended as follows:

[0035] Mode Control Panel (MCP) 856 serves as a user-interface between the flight-crew and the automation. The flight-crew select pitch, thrust, and roll modes via 860, 862, 864, 865, 866, 868, and 870, ~~and 8xx~~ respectively.

3. Paragraph [0051] is amended as follows:

[0051] A capture icon 410 is displayed which may include a capture region 610 and overshoot region 612. Capture region 610, in one embodiment, resembles a bracket where the end of the bracket nearest the current altitude 614 represents the last point to start capture and where the other end of the bracket 616 represents the first point to start capture. Relative distance indicators 615 and 617 may be provided near bracket ends 614 and 616. It should be noted that, in the depicted embodiment, the relative distances represented by the bracket ends 614 and 616, and indicated on the relative distance indicators 615 and 617, respectively, are calculated relative to the aircraft, and from the frame of reference of the aircraft, as was described above and depicted in FIG. 5A. Thus,

in FIG. 6A, the first point to initiate capture 515 corresponds to bracket end 616, and the last point to initiate capture 520 corresponds to bracket end 614. This indicates to the pilot that aircraft 201 should initiate capture when bracket end 616 reaches the target altitude icon 420, and no later than when bracket end 614 reaches target altitude icon 420. It should additionally be noted that the ~~These~~ first and last points to initiate capture and their associated relative distance indicators may be constantly or periodically recalculated and may depend on the current vertical ascent/descent rate, among other factors. During a maneuver to a different elevation, the vertical rate may first increase, then remain constant, and then decrease back to zero as the assigned elevation is attained. Therefore, the relative distance indicators (615 and 617) may change many times.

4. Paragraph [0060] is amended as follows:

[0060] Although much of the discussion has focused on examples where aircraft 201 is ascending to an assigned altitude, similar operation is provided for an aircraft assigned to a lower altitude, for an aircraft assigned to ascending or descending paths, and for embodiments showing capture region information relative to the assigned altitude, rather than relative to the aircraft or the present aircraft altitude. An example of an aircraft assigned to a lower altitude, and in accordance with an embodiment in which capture region information is displayed relative to the assigned lower altitude will now be described.

IN THE CLAIMS:

Claims 1 and 27 are amended as follows:

1. (Amended) A method for providing information to a pilot of a vehicle via a display, the method comprising the steps of:

a) indicating a current attribute of said vehicle on said display;

b) receiving a target attribute for said vehicle;

c) determining a first capture attribute, said first capture attribute corresponding to a point for said vehicle to initiate capture in order to obtain said target attribute from said current ~~position~~ attribute; and

d) displaying said first capture attribute on said display in conjunction with said current attribute of said vehicle.

27. (Amended) A display for an aircraft comprising:

a sliding scale altitude indicator,

a target altitude indicator on said sliding scale altitude indicator,

a current altitude indicator on said sliding scale altitude indicator,

a capture region indicator on said on said sliding scale altitude indicator, said capture region indicator indicating at least a point for initiating a capture, and

an overshoot region indicator on said sliding scale altitude indicator.